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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,221	10/18/2001	Dinesh Gupta	FI9-98-205DIV	8019

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INTERNATIONAL BUSINESS MACHINES CORPORATION
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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,221

Applicant(s)

GUPTA ET AL.

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on June 14, 2002 and interview summary.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19, 21-25 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 21-25, 29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 14 June 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on June 14, 2002. These drawings are not approved. The cross hatching to be shown for all the features, traces, substrate and the via, and should be selected from those shown on page 600-81 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 19, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Thornberg (US Patent 5,360,948).

Regarding claim 19, Thornberg discloses a multi-layer substrate structure (programmable multi-chip modules having two or more conductor planes, column 1, line 5-10) comprising:

at least one layer having generic electrical features altered to customize said layer, wherein said electrical features include vias, wherein said vias are selectively

filled with a conducting material and an insulating material layer (signal layers 100 and 200 with signal path 102 and 202, see figure 4 and 5, column 3, line 5-30 with plated up via 404 and 408, and cut through via 504, 506 and 510 and 402 and 406).

Regarding claims 29 and 30, Thornberg discloses any additional layers with numerous modifications and changes can be made, column 4, line 51-67.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thornberg (US Patent 5,360,948), as applied to claims 21, 29 and 30 above, and further in view of Evans et al., US Patent 6,255,602, hereafter Evans.

Regarding claim 21, though Thornberg does not explicitly disclose the electrical features include a wiring pattern having portions selectively removed. Customizing by removing such electrical pattern is well known in the art. Evans et al., disclose one such universal circuit board customized by removing wiring pattern. Furthermore, cut through via holes 504, 506 and 510 of Thornberg divide the signal path 102 and 202, which is as good as removal of portion of wiring selectively removed. Therefore, it would have been

obvious to one having ordinary skill in the art at the time the invention was made to provide the circuit board of Thornberg with removable wiring pattern in order to have further flexibility in having additional customizations for various different modifications.

Regarding claim 22, Thornberg further discloses that additional layers with desired variation can be provided, column 4, line 51-67.

Regarding claim 23, the Thornberg further discloses the layer for programmable module.

Regarding claim 24, Thornberg further discloses a generic grid of vias useful with a plurality of differently customized layers; see figures 3, 4 and 5 with a pattern of via holes.

Regarding claim 25, Thornberg further discloses the generic pattern of wiring, wirings 102 and 202, see figure 4 and 5.

Response to Arguments

6. Applicant's arguments filed on June 14, 2002 have been fully considered but they are not persuasive.

Regarding claim 19, applicant's argument about the via holes filled with insulating material on page 5, of the response is considered, however the open via holes, 402 and 406 or cut through via holes of the prior art, are filled with insulating material, which is air.

Regarding amended claim 22, as explained and disclosed by the prior art of Thornberg, column 4, line 51-67, any number of layers with numerous modifications and changes are possible to construct a multilayer module.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Hargis discloses via holes filled with conductive and insulating materials, and Newton, Jr. discloses a programmable universal circuit board with parallel spaced mutually perpendicular conductor.
(copies mailed with previous action).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
September 8, 2002


DAVID L. TALBOTT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800